Remarks

Entry of the above-noted amendments, reconsideration of the application, and allowance of all claims pending are respectfully requested. By this amendment, claims 20, 27, and 35 are amended, and claims 37 and 38 are added. These amendments to the claims constitute a bona fide attempt by applicants to advance prosecution of the application and obtain allowance of certain claims, and are in no way meant to acquiesce to the substance of the rejections. Support for the amendments can be found throughout the specification (e.g., page 2, lines 4-14; page 5, line 33, to page 6, line 7; page 6, lines 19-28; page 7, line 21, to page 8, line 5), figures, and claims and thus, no new matter has been added. Claims 1-38 are pending.

Response to the Notice of Non-Compliant Amendment:

The Notice of Non-Compliant Amendment stated that the Response to Office Action filed on October 7, 2005 was non-compliant because "the MPEP states, 'The requirements of 37 CFR 1.111(b) must be complied with by pointing out the specific distinctions believed to render the claims patentable over the references in presenting arguments in support of new claims and amendments.'" In the Response filed on October 7, 2005, claims 20, 27, and 35 were amended, and claims 37 and 38 were added.

All the amended and new claims are dependent claims. In reference to the independent claims (claims 1, 13, 21, and 28), the Response filed on October 7, 2005 presented arguments that included specific distinctions believed to render the independent claims patentable over the art of record. The dependent claims are believed allowable for the same reasons as the independent claims 1, 13, 21, and 28, as well as for their own additional characterizations. Therefore, any arguments presented with respect to the independent claims can also be applied to the dependant claims. Furthermore, the Response filed on October 7, 2005 included additional

specific distinctions believed to render the new dependent claims 37 and 38 patentable over the art of record.

The remarks originally presented in the Response filed on October 7, 2005 are reproduced below. Entry of the above-noted amendments, reconsideration of the application, and allowance of all claims pending are therefore respectfully requested.

Claim Objections:

Claims 20, 27, and 35 are objected to under 37 CFR 1.75 as being substantial duplicates of claims 19, 26, and 34, respectively. Claims 19, 26, and 34 recite a "voice signal" and claims 20, 27, and 35 have been amended to recite a "video signal." Withdrawal of the objection to claims 20, 27, and 35 is therefore respectfully requested.

Claim Rejections - 35 U.S.C. §§ 102 and 103:

Claims 1, 9, 13, 21, 28, and 36 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Gummalla et al. (U.S. Patent Publication No. 2002/0021711; "Gummalla"). Claims 2-4, 6, 7, 14-16, 22, 23, and 29-31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gummalla in view of DOCSIS Specifications. Claims 5, 17, and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gummalla in view of Campbell et al. (U.S. Patent No. 5,390,181; "Campbell"). Claims 8 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gummalla in view of Gordon et al. (U.S. Patent No. 6,614,843; "Gordon"). Claims 10-12, 18-20, 25-27, and 33-35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gummalla in view of Sala et al. (U.S. Patent Publication No. 2001/0053152: "Sala"). These rejections are respectfully, but most strenuously, traversed.

It is well-settled that there is no anticipation unless (1) all the same elements are (2) found in exactly the same situation and (3) are united in the same way to (4) perform the identical function. Since the Office Action's citations to each of the applied references is missing at least one element of each of applicants' independent claims, applicants respectfully submit that the claimed invention is not anticipated by the Office Action's citations to the applied references, as further discussed below.

For explanatory purposes, applicants discuss herein one or more differences between the Office Action's citations to the applied references and the claimed invention with reference to one or more parts of the applied references. This discussion, however, is in no way meant to acquiesce in any characterization that one or more parts of the Office Action's citations to the applied references correspond to the claimed invention.

Applicants respectfully submit that the Office Action's citations to the applied references, with or without modification or combination, assuming, *arguendo*, that the modification or combination of the Office Action's citations to the applied references is proper, do not teach or suggest one or more elements of the claimed invention. A careful reading of the Office Action's citations to the applied reference fails to teach or suggest, for example, sending one or more upstream signals as pulse code modulated data without packet headers using an upstream cable protocol; and sending one or more downstream signals as pulse code modulated data without packet headers using a downstream cable protocol, as recited in applicants' independent claim 1.

Gummalla (paragraph 40) discloses generating a G.711 PCM byte of data every 125 microseconds. Gummalla then discloses accumulating the G.711 PCM bytes into 10 millisecond packets. Thus, each 10 millisecond packet may contain up to 80 bytes of voice data. Cable

modem 104 transmits one of the packets every 10 milliseconds. Each of the packets employ packet headers.

Gummalla (paragraphs 51-54; FIG. 3) discloses the voice header format for these packets. An individual voice packet 310 includes a silence flag 304, a voice channel identifier 306 (VIDO), and a voice payload 308. The silence flag 304 and the voice channel identifier 306 are headers of the voice packet 310. FIG. 3 labels the silence flag 304 and the voice channel identifier 306 collectively as "VOICE HDR."

Also shown in FIG. 3 is a protocol data unit 302. The protocol data unit 302 contains headers 303. The headers 303 include "802.3 Hdr", "IP Hdr", "UDP Hdr", and "RTP Hdr". The headers 303 of the protocol data unit 302 are compressed to include the headers of the voice packet 310 (i.e., the silence flag 304 and the voice channel identifier 306).

The Office Action's citation to Gummalla simply does not disclose transporting PCM data without packet headers. In the rejection of the independent claims, the Office Action relies on the statement in Gummalla (paragraph 54) that: "[i]n general, voice channel transmits the raw data without any headers." However, the voice payload 308 does require headers. The silence flag 304 and the voice channel identifier 306 are identified by Gummalla as headers for the voice packet 310. Therefore, assuming *arguendo* that the statement in paragraph 54 is accurate, in light of the surrounding disclosure, the statement may only be understood as treating the voice packet 310 (including the voice headers 304 and 306) as the "raw data," and that the packet 310 may not have any additional uncompressed headers. However, the voice packet 310 still has headers, such as the silence flag 304 and the voice channel identifier 306. Simply missing from the Office Action's citation to Gummalla is any mention of sending one or more upstream signals as pulse code modulated data without packet headers using an upstream cable protocol;

and sending one or more downstream signals as pulse code modulated data without packet headers using a downstream cable protocol, as recited in applicants' independent claim 1.

So, the Office Action's citation to Gummalla fails to satisfy at least one of the limitations recited in applicants' independent claim 1.

Furthermore, Gummalla discloses packetizing multiple voice samples over a period, such as 10 ms. For example, at paragraph 40 Gummalla discloses that: "G.711 PCM voice generates a byte of data every 125 microsecs or 64 Kbps. If these bytes are accumulated into 10 ms packets, the packet size would be 80 bytes of data. Therefore, every 10 ms cable modem 104 will need enough upstream bandwidth to transmit 80 bytes of data." This collection and packetization of voice creates several shortcomings described on page 2, lines 4-14 of the present application:

> Users of the DOCSIS protocol have proposed collecting 80 samples over 10 ms, and in some cases 5 ms sample sizes, to provide echo cancellation, thereby introducing a 10 ms delay, or 5 ms for 5 ms sample sizes. Packetized data causes jitter, i.e., packets do not always arrive in fixed intervals, often causing reduction in signal quality, including voice quality for voice signals, and jitter buffers are introduced to minimize such jitter, although such buffers add delay. Because the current DOCSIS proposal for voice requires a packet structure that causes buffer delay (i.e., the 5 to 10 ms delay described above), there is a need for echo cancellation, which also introduces delay in addition to the network and playback delays involved in the proposed real-time voice-over-cable system. These delays are doubled in a two-way (round-trip) communication.

The shortcomings of the Office Action's citation to Gummalla relative to certain elements of the claimed invention have been discussed above. The Office Action proposes a combination of the citation to Gummalla with citations to the DOCSIS Specifications, Campbell, Gordon, and Sala. However, the Office Action's citations to the DOCSIS Specifications, Campbell, Gordon, and Sala do not overcome the deficiency of the Office Action's citation to

Gummalla. Applicants respectfully submit that the proposed combination of the Office Action's citation to Gummalla with the Office Action's citations to the DOCSIS Specifications, Campbell, Gordon, and Sala fails to provide the required approach, assuming, *arguendo*, that the combination of the Office Action's citation to Gummalla with the Office Action's citations to the DOCSIS Specifications, Campbell, Gordon, and Sala is proper.

Furthermore, the Office Action does not allege that the art of record provides any teaching, suggestion, or incentive for modifying the citations to Gummalla, the DOCSIS Specifications, Campbell, Gordon, and/or Sala to provide the claimed approach.

For all the reasons presented above with reference to claim 1, claims 1, 13, 21, and 28 are believed neither anticipated nor obvious over the art of record. The corresponding dependent claims are believed allowable for the same reasons as independent claims 1, 13, 21, and 28, as well as for their own additional characterizations.

For example, simply missing from the Office Action's citation to Gummalla is any mention of enclosing the one or more downstream signals as pulse code modulated data without application-level packet headers in a Motion Pictures Experts Group (MPEG) transport, as recited in applicants' dependent claim 37. Gummalla discloses application-level voice packets with headers.

Additionally, simply missing from the Office Action's citation to Gummalla is any mention of sending the one or more upstream signals as pulse code modulated data in a form that allows transfer to Public Switched Telephone Network (PSTN) without transcoding the pulse code modulated data of the one or more upstream signals, as recited in applicants' dependent claim 38. The packet approach in Gummalla with compressed headers and silent suppression

requires expensive equipment to transcode from application packet/compressed headers to ordinary PCM in order to be loaded into the PSTN.

Withdrawal of the §§ 102 and 103 rejections is therefore respectfully requested.

In view of the above amendments and remarks, allowance of all claims pending is respectfully requested. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicants' attorney.

Respectfully submitted,

Carmen B. Patti
Attorney for Applicants
Reg. No. 26,784

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CARMEN B. PATTI & ASSOCIATES, LLC
Customer Number 47382